Module 04 – Multiperiod Modeling

Exploratory Data Analysis:

investment_name	investment_pct	month_can_start_investing	can_invest_every	CODE
CandyCrest Holdings	0.0199	1	1	A
Gumball Growth Gro	0.0422	1	2	B
Nougat Nest Investm	0.0646	2	3	C
RockCandy Returns	0.0869	3	4	D
SugarFund Capital	0.1094	1	5	E

Month of Cashflow						Cash Flow Summary for Month									
Investment	CODE	Inflow	Outflow	Amount	Return	1	2	3	4	5	6	7	8	9	10
CandyCrest Holdings	A	1	2	$ -	1.99%	-1	1.0199								
Gumball Growth Group	B	1	3	$ 655.14	4.22%	-1	<--->	1.0422							
SugarFund Capital	E	1	6	$ 225.35	10.94%	-1	<--->	<--->	<--->	<--->	1.1094				
CandyCrest Holdings	A	2	3	$ -	1.99%		-1	1.0199							
Nougat Nest Investments	C	2	5	$ -	6.46%		-1	<--->	<--->	1.0646					
CandyCrest Holdings	A	3	4	$ -	1.99%			-1	1.0199						
Gumball Growth Group	B	3	5	$ -	4.22%			-1	<--->	1.0422					
RockCandy Returns	D	3	7	$ 432.78	8.69%			-1	<--->	<--->	<--->	1.0869			
CandyCrest Holdings	A	4	5	$ -	1.99%				-1	1.0199					
CandyCrest Holdings	A	5	6	$ -	1.99%					-1	1.0199				
Gumball Growth Group	B	5	7	$ -	4.22%					-1	<--->	1.0422			
Nougat Nest Investments	C	5	8	$ -	6.46%					-1	<--->	<--->	1.0646		
CandyCrest Holdings	A	6	7	$ -	1.99%						-1	1.0199			
CandyCrest Holdings	A	7	8	$ -	1.99%							-1	1.0199		
Gumball Growth Group	B	7	9	$ 470.39	4.22%							-1	<--->	1.0422	
CandyCrest Holdings	A	8	9	$ -	1.99%								-1	1.0199	
CandyCrest Holdings	A	9	10	$ 490.24	1.99%									-1	1.0199
			TOTAL AMOUN	$ 880.48	Surplus Funds	$ (880.48)	$ -	$ 250.00	$ -	$ -	$ 250.00	$ -	$ -	$ -	$ 500.00
					Req'd Payments	$ -	$ -	$ 250.00	$ -	$ -	$ 250.00	$ -	$ -	$ -	$ 500.00

Model Formulation:

Min: A1 + B1 + C1 + D1 + E1

Subject To:

Cash Flow Year 2: 1.0199A1 - 1A2 – 1C2
Cash Flow Year 3: 1.0422B1 + 1.0199A2 - 1A3 – 1B3 – 1D3
Cash Flow Year 4: 1.0199A3 - 1A4
Cash Flow Year 5: 1.0646C2 + 1.0422B3 + 1.0199A4 - 1A5 – 1B5 – 1C5
Cash Flow Year 6: 1.1094E1 + 1.0199A5 - 1A6
Cash Flow Year 7: 1.0869D3 + 1.0422B5 + 1.0199A6 - 1A7 – 1B7
Cash Flow Year 8: 1.0646C5 + 1.0199A7 - 1A8
Cash Flow Year 9: 1.0422B7 +1.0199A8 - 1A9
Cash Flow Year 10: 1.0199A9

Ai, Bi, Ci, Di, Ei >= 0

Model Optimized for Least Cost out of Pocket

Cashflow Summary:

Month of Cashflow						Cash Flow Summary for Month									
Investment	CODE	Inflow	Outflow	Amount	Return	1	2	3	4	5	6	7	8	9	10
CandyCrest Holdings	A	1	2	$ -	1.99%	-1	1.0199								
Gumball Growth Group	B	1	3	$ 655.14	4.22%	-1	<--->	1.0422							
SugarFund Capital	E	1	6	$ 225.35	10.94%	-1	<--->	<--->	<--->	<--->	1.1094				
CandyCrest Holdings	A	2	3	$ -	1.99%		-1	1.0199							
Nougat Nest Investments	C	2	5	$ -	6.46%		-1	<--->	<--->	1.0646					
CandyCrest Holdings	A	3	4	$ -	1.99%			-1	1.0199						
Gumball Growth Group	B	3	5	$ -	4.22%			-1	<--->	1.0422					
RockCandy Returns	D	3	7	$ 432.78	8.69%			-1	<--->	<--->	<--->	1.0869			
CandyCrest Holdings	A	4	5	$ -	1.99%				-1	1.0199					
CandyCrest Holdings	A	5	6	$ -	1.99%					-1	1.0199				
Gumball Growth Group	B	5	7	$ -	4.22%					-1	<--->	1.0422			
Nougat Nest Investments	C	5	8	$ -	6.46%					-1	<--->	<--->	1.0646		
CandyCrest Holdings	A	6	7	$ -	1.99%						-1	1.0199			
CandyCrest Holdings	A	7	8	$ -	1.99%							-1	1.0199		
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CandyCrest Holdings	A	8	9	$ -	1.99%								-1	1.0199	
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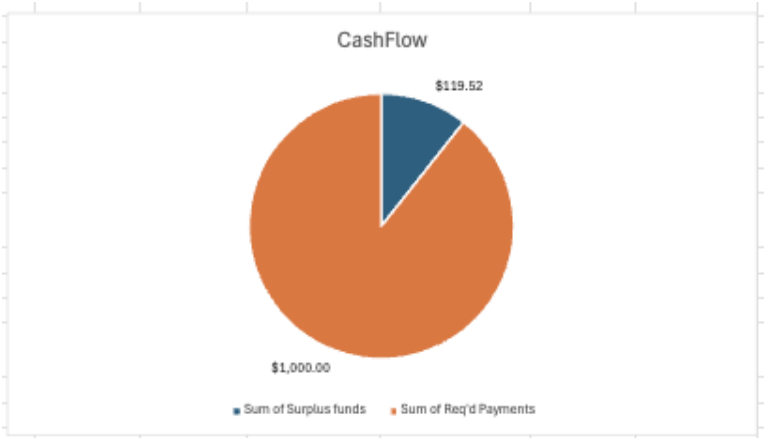
			TOTAL AMOUN	$ 880.48	Surplus Funds	$ (880.48)	$ -	$ 250.00	$ -	$ -	$ 250.00	$ -	$ -	$ -	$ 500.00
					Req'd Payments	$ -	$ -	$ 250.00	$ -	$ -	$ 250.00	$ -	$ -	$ -	$ 500.00

Within this model you can find the inflow of cash through the different investments.



Model with Stipulation

Please copy the tab of your original model before continuing with the next part to avoid messing up your original solution.

Try one of these 2 scenarios:

> ***If we remove the midterm payments and instead pay the entirety at the end of the time period, does your model change at all? If so, why may there be a change?***
>
> ***An investor normally tries to not be oversubscribed/overexposed to one single investment. Can you add a constraint to your model to limit the amount of exposure in any single investment and describe how the model has changed?***